

REMARKS

In the Office Action, claims 9-21 were provisionally rejected under the judicially created doctrine of the obviousness-type double patenting as being unpatentable over claims 1, 10 and 15 of co-pending United States Patent Application Serial No. 10/620,057. Applicant submits herewith a Terminal Disclaimer. Therefore, Applicant believes that the rejection has been overcome.

In the Office Action, the Examiner also rejected claims 16-18 citing several prior art references, namely United States Patent Nos. 5,811,982 (Beaman et al.) and 6,605,954 (Nagar), and United States Patent Application Publication No. US 2003/0122567 (Miller). Each of the independent claims have been amended in order to further distinguish the claimed invention from that which is disclosed in the cited references. Applicant respectfully submits that what is now claimed is neither disclosed nor suggested by the prior art of record.

Specifically, claim 16 has been amended to specifically claim a probe card which comprises a package having solder balls mountable to the test head interphase board, and having a single pad on which is disposed electrically conductive material configured to electrically contact a plurality of bumps on the device (claim 19 is somewhat similar but is specifically directed to a method). In contrast, Beaman et al. discloses a plurality of cantilever test probes, each of which is attached to fan out wiring, and wherein each test probe contacts a different, single probe pad. Beaman et al. does not disclose providing a single pad on which is disposed electrically conductive material configured to electrically contact a plurality of bumps on the device.

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Similarly, neither Miller nor Nagar disclose what is now being claimed. For example, while Miller mentions, in very general terms, providing interconnect structure at paragraph [0075], Miller does not disclose or suggest providing what is now being specifically claimed in claim 16 (or claim 19). Applicant respectfully asserts that to take the position that Miller discloses what is now being specifically claimed would effectively amount to hindsight. There are many court decisions which hold that using hindsight is improper. As early as 1891, the United States Supreme Court held that:

Knowledge after the event is always easy, and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be brought forward to show that the new thing which seemed to have eluded the search of the world was always ready at hand and easy to be seen by a merely skillful attention. But the law has other tests of the invention than subtle conjectures of what might have been seen and yet was not. It regards a change as evidence of novelty, the acceptance and utility of change as further evidence, even as demonstration . . . Nor does it detract from its merit that it is the result of experiment and not the instant and perfect product of inventive power. A patentee may be baldly empirical, seeing nothing beyond his experiments and the result; yet if he has added a new and valuable article to the world's utilities, he is entitled to the rank and protection of an inventor . . . It is certainly not necessary that he understand or be able to state the scientific principles underlying his invention, and it is immaterial whether he can stand a successful examination as to the speculative ideas involved.

Diamond Rubber Co. v. Consolidated Rubber Tile Co., 220 U.S. 428 , 435-36.

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In addition, an new independent claim has been added - claim 22. New claim 22 specifically claims a method of measuring package interconnect impedance, wherein the method includes providing a tester, providing a tester head, providing a device under test (DUT)/load board which is configured to retain a substrate, providing a Digital Sampling Oscilloscope (DSO) connected to both the tester and the tester head, providing a probe card mounted to the tester head and contactable with the substrate, wherein the probe card comprises a package having solder balls mountable to the test head, and having a single pad on which is disposed electrically conductive material configured to electrically contact a plurality of bumps on the substrate, using the DSO to launch a signal to the tester head which is received by the substrate, wherein the DSO is configured to receive the launched signal and a reflected signal from the tester head and provide the signals to the tester; using the tester to obtain a waveform and store data in a file and using post processing software to analyze the data and provide interconnect impedance versus time data, thereby monitoring impedance tolerance. Applicant respectfully submits that what is being claimed in claim 22 is not disclosed or suggested by the prior art of record. Therefore, it is requested that claim 22, as well as those claims which depend therefrom, be passed to issuance.

In view of the above amendments and remarks, Applicant respectfully submits that the claims of the application are allowable over the rejections of the Examiner. Should the present claims not be deemed adequate to effectively define the patentable subject matter, the Examiner is respectfully urged to call the undersigned attorney of record to discuss the claims in an effort to reach an agreement toward allowance of the present application.

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Should the present claims not be deemed adequate to effectively define the patentable subject matter, the Examiner is respectfully urged to call the undersigned attorney of record to discuss the claims in an effort to reach an agreement toward allowance of the present application.

Respectfully submitted,

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By: 
James R. Foley, Reg. No. 39,979
TREXLER, BUSHNELL, GIANGIORGI,
BLACKSTONE & MARR, LTD.
105 West Adams Street, 36th Floor
Chicago, Illinois 60603-6299
Tel: (312) 704-1890

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